

9232

Diag. Cht. No. 1208-2

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey Hydrographic

Field No. PE-20-2-71

Office No. H-9232

LOCALITY

State Massachusetts

General Locality Off Cape Cod

Locality East of Wellfleet

1971

CHIEF OF PARTY
B.I. Williams

LIBRARY & ARCHIVES

DATE March 27, 1978

☆ U.S. GOV. PRINTING OFFICE: 1976-808-441

9232

U.S. a
CH
✓ 13246
✓ 13006
✓ 13007 Nov. 9-26-81
✓ 13200
✓ 13200
✓ 13200

HYDROGRAPHIC TITLE SHEET

4-9232

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

PE-20-2-71

State MassachusettsGeneral locality ~~Eastern shore of~~ Cape CodEast of
Locality WellfleetScale 1:20,000Date of survey 21-23 September, 1971Instructions dated 27 April, 1971Project No. OPR-473-PE-71essel PEIRCE (2830)Chief of party CDR Bruce I. WilliamsSurveyed by LCDR Davis, LT Rolland, LTJG^{AS} Hudson, ^{SP}Stokes, ^{TW}Richards, ^{PS}Hudes, ^{CS}Mr. F. LewisSoundings taken by echo sounder, hand lead, pole Raytheon Model DE-723 FathometerGraphic record scaled by Styron, Hendrix, TaylorGraphic record checked by Above officersProtracted by Officers, Mr. LewisAutomated plot by CALCOMP # 618Soundings penciled by LT Rolland() ndings in MEGALY feet at MLW MLLWREMARKS: HDEG Category 1 - changed to Category 4 - Completely processed 7-20-79Applied to stls 4/4/78

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DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY H-9232 (PE-20-2-71)

NOAA SHIP PEIRCE

SCALE 1:20,000

CDR Bruce I. Williams

CHIEF OF PARTY

A. PROJECT

This report describes Project OPR-473-PE-71, instructions dated 27 April, 1971, with Change No. 1, Amendment to Project Instructions dated 24 May, 1971. ✓

B. AREA SURVEYED

This survey was undertaken to fill in a holiday left by the original boat sheet layout. It lies off the town of Wellfleet, Cape Cod, Massachusetts. It is bounded on the north by latitude $42^{\circ}-03' N$, on the south by latitude $41^{\circ}-53' N$, on the west by the eastern limit of hydrography on Sheet PE-20-1-71 (about two miles offshore), and on the east by longitude $69^{\circ}-50' W$. Junctions were made with Survey H-9011 (1:40,000, 1968) on the north and east, and Survey H-5276 (1:100,000, 1932) on the east, as well as Sheet PE-20-1-71 (1:20,000), completed in September, 1971 by PEIRCE launch PE-2. (H-9226). ✓

C. SOUNDING VESSEL

All soundings on this survey were taken with the Ship PEIRCE. ✓

D. SOUNDING EQUIPMENT

Raytheon model DE-723 fathometer number 928 was used to obtain all soundings for the survey. All soundings are in feet. The initial was maintained at 9.0 feet. Methods of correcting echo soundings include initial correction, transducer draft correction (leadline comparison), settlement and squat correction, and velocity corrections. ✓

E. SMOOTH SHEET

The smooth sheet will be machine plotted at Atlantic Marine Center. All raw data and correctors were logged on paper tape according to the formats in the AMC Manual, Chapter 3, dated 30 June, 1971. ✓

F. CONTROL

Decca Hi-Fix in range-range mode, frequency 1718.59 KHZ, was used for control of the entire survey. Shore stations were located at Cape Cod Light and Nauset Light. Hi-Fix arcs were plotted on the sheet by AMC. Calibration was performed on the boatsheet, using visual signals plotted from triangulation data, the only exception being a photo signal transferred from Incomplete Manuscript No. TP-00168 as a check object. A lane-count buoy was established inside the survey area immediately after calibration.

G. SHORELINE

There is no shoreline within the limits of the survey. ✓

H. CROSSLINES

Crosslines comprised 7% of the total hydrographic mileage, and crossings were good, agreeing within 2-3 feet. The apparent discrepancies of approximately 8 feet in the vicinity of 42°-00' N, 69°-55' W were examined and found to be real bottom features. *Note: 482' sounding between Rose 230-231*

No significant error in smooth sheet depths.

I. JUNCTIONS

The junction with H-9011 was generally good (within 2 feet), while the junction with H-5276 was only slightly poorer (within 5 feet); possible reasons for the larger disagreements with H-5276 include the 1:100,000 scale of the latter, and the time that has elapsed between it and the present survey (39 years). The junction was good with H-9226 (PE-20-1-71).

J. COMPARISON WITH PRIOR SURVEYS

There are no presurvey review items within the limits of this survey.

K. COMPARISON WITH CHART

Agreement with C&GS Chart No. 1208 (15th Edition, 31 October, 1970) is good. The depth curves on the boat sheet are displaced shoreward with respect to the chart. This displacement was noticed along the Cape Cod coast to the north during earlier surveys this season. The amount of displacement, presently about 0.4 mile at most, will increase when velocity correctors, etc. are applied to the boat sheet soundings.

L. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys for charting. ✓

M. AIDS TO NAVIGATION

The only aid encountered on this sheet is Mause Lighted Whistle Buoy No. 4. Its Hi-Fix position was found to be only 0.08 nautical mile from its Light List position. The buoy is ~~apparently~~ adequate for its intended purpose.

Posn No 742

N. STATISTICS

Total number of positions.....742
Nautical miles of sounding line.....270.5
Square nautical miles total area.....38.8
Number of bottom samples.....30
Number of Nansen Casts.....1

O. MISCELLANEOUS

Considerable difficulty was encountered in trying to maintain tide gages along the eastern coast of Cape Cod, because of the total lack of piers or other sturdy installations, and the heavy surf which pounds the unprotected beaches. The method of tide staff installation was to jet a 2-inch pipe into the sandy bottom with a water pump, then clamp the staff to the pipe. The plastic gas tubing was then attached to the orifice, the tubing being protected by vinyl garden hose against the surf. Heavy surf, especially during storms, caused the staffs to lean excessively, and in some cases tore them out completely and snarled or broke the tubing; at the same time, the surf made prompt repairs very dangerous if not impossible. Because of these circumstances, all tide gages were inoperable during the entire survey. See the TIDE NOTE in this report.

P. REFERENCES TO REPORTS

Electronic Systems Calibration Report, OPR-473-PE-71
Report on Corrections to Echo Soundings, OPR-473-PE-71
Seasons Report, NOAA Ship PEIRCE, 1971

Respectfully Submitted:

James L. Stokoe

James L. Stokoe
Ltjg., NOAA

*Shoal Mause Light Buoy No. 4, Cape Cod, Mass.
Station 1932-1936*

*45° 51' 37.776"
69° 57' 02.354"*

APPROVAL SHEET
PE-20-2-71
H-9232

The boat sheet and all other records for this survey have been reviewed by me and have my approval. The survey is complete and adequate to supersede prior surveys for charting.

Bruce I. Williams

Bruce I. Williams
CDR, NOAA
Commanding Officer
NOAA Ship PEIRCE

TIDE NOTE

1. Project No: OPR-473 2. Vessel/~~Field~~ Unit: PEIRCE
 3. Year: 1971 4. Meridian Time Zone: 000°
 5. Tide Station Name: Boston Standard Gage
 6. Position: Lat. 42° 21 ' Long. 71° 03 '
 7. Plane of Reference: ☒ MLW, ☐ MLLW corresponds to _____
 feet on the tide staff for the period _____
 8. Hourly Heights: ☒ Standard Gauge, furnished from Rockville.
☐ Scaled and logged from field marigrams.
 9. Tidal Zoning: ☐ Not applicable.
☐ By two or more gauges automatically zoned.
☒ By applying tidal differences and constants
 for the area(s): a. _____

TIME (Hour, Minute)		HEIGHT (Feet)		HEIGHT RATIO (If Applicable)	
High Water	Low Water	High Water	Low Water	High Water	Low Water

b. _____

TIME (Hour, Minute)		HEIGHT (Feet)		HEIGHT RATIO (If Applicable)	
High Water	Low Water	High Water	Low Water	High Water	Low Water

c. Include additional areas on separate sheet(s).

10. Remarks: The Pamet River Gage and the Peaked Hill Bar gage were
both out of order during this entire survey. The location of
these gages relative to the survey area is shown on the attached
progress sketch.



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

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Date: 12 November 1971

Reply to: Commanding Officer
Attn of: NOAA Ship PEIRCE

Subject: Hourly Heights, OPR-473, Sheet 20-2-71

To: Chief, Tidal Datum Planes Section
03311

1. Please provide hourly heights for the Boston Standard Tide Gage for the following dates: Little America Gage out of order.

September 21 -	1400-2300
September 22 -	0000-2300
September 23 -	0000-2300

2. Please provide a time and height correction to the Boston Gage for survey area shown on enclosed copy of chart 1208.

Note 1. copy of 1208 not sent to CAM3

Note 2. Little America (head of Pamet River) gage did not operate during the three days of this survey.

Respectfully
J.O. Rolland
J.O. Rolland
for
B.I. Williams
C.O. PEIRCE

ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS

PE-20-2-71

Echo soundings taken on PE-20-2-71 were corrected for velocity, transducer draft, settlement & squat, and initial setting. These correctors are abstracted on the following pages.

Reference is made to the Corrections to Echo Soundings Report, OPR-473-PE-71, 1971.

I. VELOCITY

Mansen Cast #3 (Lat. 42-00-00 N, Long. 69-57-00 W) was used to determine velocity correctors for the entire survey. The transducer draft correction was determined by leadline comparison, and the two correctors were combined and entered in the Velocity Table Tape.

Velocity Table 1

<u>Depth (to)</u>	<u>Corrector</u>
39.0 feet	+1.4 feet
52.0	+1.6
72.0	+1.8
97.0	+2.0
123.0	+2.2
149.0	+2.4
175.0	+2.6
201.0	+2.8
227.0	+3.0
254.0	+3.2
280.0	+3.4
306.0	+3.6
332.0	+3.8
999.9	+4.0

Velocity Table 2

<u>Depth (to)</u>	<u>Corrector</u>
999.9 feet	0.0 feet

VELOCITY TABLE TAPE
OPR-473-PE-71
SHEET PE-20-2-71
REGISTRY NO. H-9232

	I					
	N	VEL	TAB		VES	
DEPTH	D	CORR	NO	UNIT	ID	SHEET
000390	0	0014	0001	000	283000	009232
000520	0	0016				
000720	0	0018				
000970	0	0020				
001230	0	0022				
001490	0	0024				
001750	0	0026				
002010	0	0028				
002270	0	0030				
002540	0	0032				
002800	0	0034				
003060	0	0036				
003320	0	0038				
999999	0	0040				
999999	0	0000	0002	000	283000	009232

II. TRA CORRECTORS

Initial correction and Settlement & squat correction were combined in the TRA correctors, which usually also contain the following:

Transducer draft correction- this was already incorporated into the velocity correctors.

Phase correction- no correction was applied to the survey.

Instrument error- this is accounted for in the leadline comparison, which was incorporated into the velocity correctors.

Since all soundings on PE-20-2-71 were taken at standard speed, a corrector of +0.9 foot should be applied to all soundings, according to the results of a settlement & squat determination run on 13 May, 1971. This, combined with the initial corrections (the initial was maintained at 9.0 feet), make up the TRA correctors.

Abstract of Initial Corrections

<u>Day</u>	<u>Time (from)</u>	<u>Corrector</u>
264	140800	0.0
	190300	+0.5
	191300	+1.0
	192300	0.0
	204900	+0.3
	205115	0.0
265	001700	0.0
	100230	+0.4
	101100	0.0
	115530	+0.3
	121000	0.0
	154030	-0.2
	154700	0.0
	172700	+0.3
	173800	0.9

TC/TI TAPE
 OPR-473
 Sheet 20-2-71
 H-9232

	I N	O V	T T						
TIME	D	TRA	I I	DAY	VES	ID	SHEET		
170810	0	0081	0001	254	253000	002832			
190800	0	0014							
111300	0	0019							
120800	0	0009							
202900	0	0012							
205115	0	0009							
001700	0	0000	0001	205	253000	002832			
100230	0	0013							
101100	0	0009							
115530	0	0012							
121000	0	0009							
150030	0	0007							
150700	0	0009							
172700	0	0012							
173500	0	0009							

ABSTRACT OF CORRECTIONS TO DISTANCE MEASUREMENTS

H-9232

PE-20-2-71

Hi-Fix was used to control the entire survey. The final correctors were computed on Launch 1257's computer and were found to be within 0.05 lane of the field correctors. Check angles were fully incorporated into both field and final computations.

Reference is made to the Electronic Systems Calibration Report, OPR-473-PE-71.

Following are an abstract of Hi-Fix correctors and the Corrector tape printout.

Abstract of Hi-Fix Correctors

<u>Day</u>	<u>Time (from)</u>	<u>Corr. Pat 1</u>	<u>Corr. Pat 2</u>
264	140800	+0.12 lane	+0.03 lane

Corrector Tape
OPR-473-PE-71
PE-20-2-71
H-9232

	I						
	N		Vess		Pat 1	Pat 2	
Time	D	TRA	Id	Day	Corr	Corr	
140800	0	0000	2830	264	000012	000003	
201730	1	1245					
001700	0	0000	2830	265	000012	000003	
021900	0	0000	2830	265	000112	000003	
022100	0	0000	2830	265	000012	000003	
000000	0	0000	2830	266	000012	000003	

ATLANTIC MARINE CENTER
ELECTRONIC CONTROL PARAMETERS

1. Project # OPR-173 2. Reg. # H-9232 3. Field # 03-20-2-71
4. Type of Control: Hi-Fix (Hi-Fix, Raydist, EPI, etc.)
5. Frequency 1718.59 KHz (for conversion of electronic lanes to meters)
6. Mode of Operation (check one):

Range-Range ☒Range-Visual ☐

Range One (R₁)
Station I.D. Nauset
Range Two (R₂)
Station I.D. Cape Cod

Lat. 41° 51' 38.182"
Long. 79° 57' 08.110"
Lat. 42° 02' 22.319"
Long. 70° 03' 37.259"

Hyperbolic (3-station) ☐Hyper-Visual ☐

Slave One
Station I.D. _____
Master
Station I.D. _____
Slave Two
Station I.D. _____

Lat. _____° _____' _____"
Long. _____° _____' _____"
Lat. _____° _____' _____"
Long. _____° _____' _____"
Lat. _____° _____' _____"
Long. _____° _____' _____"

7. Location of Survey:

Range-Range ☒

Imagine an observer is standing at R₁ Station and looking directly at R₂ (check one):

Survey area is to observer's Right ☒ A=0Survey area is to observer's Left ☐ A=1Hyperbolic ☐

Looking from survey area toward Master Station:

Slave One must be to observer's Left;Slave Two must be to observer's Right.

- 8.
- ☐
- This form is submitted as an aid in preparing a boat sheet.

☒ This form applies to all data on this survey.☐ This form applies to part of the data on this survey.

Vessel EDP #	From Time	Day	To Time	Day	Position Numbers (inclusive)
_____	_____	_____	_____	_____	_____ to _____
_____	_____	_____	_____	_____	_____ to _____
_____	_____	_____	_____	_____	_____ to _____

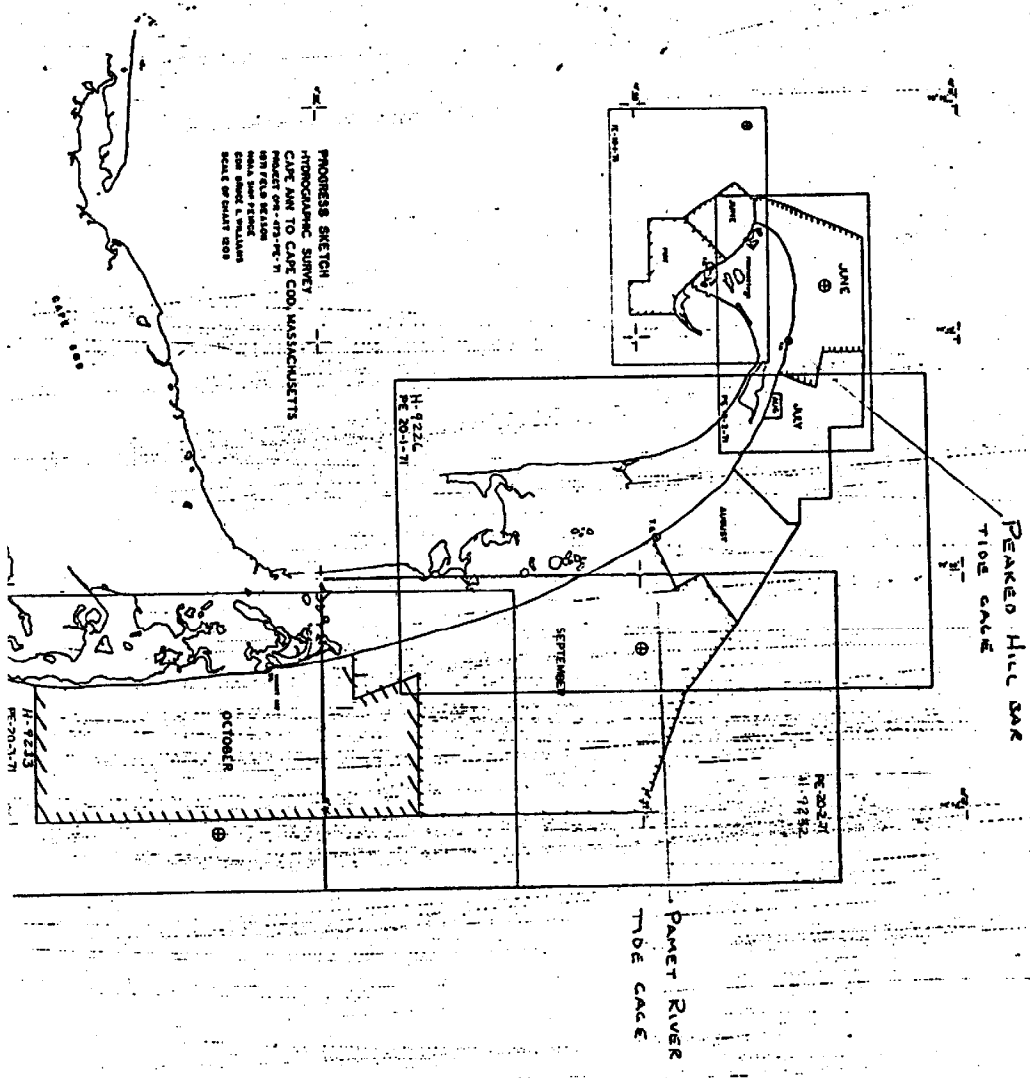
9. Remarks:
- This sheet is necessary to cover a holiday left by the

ABSTRACT OF DAILY POSITIONS
and
ABSTRACT OF HYDROGRAPHIC DATA
H- 9232
OPR-473 Sheet PE-20-2-71

<u>DATE</u>	<u>DAY NO.</u>	<u>POSITIONS</u>
21 Sept.	264	0001-0203
22 Sept.	265	0204-0724
23 Sept.	266	0725-0742

Positions 0001-0711 are trackline.
Positions 0712-0741 are bottom samples (B/S)
Position 0742 is a buoy location.

<u>DETACHED POSITION NO.</u>	<u>DATA OBTAINED</u>
0712	B/S #1 med br M S, med, crs P
0713	B/S #2 crs br S
0714	B/S #3 Rk, P
0715	B/S #4 crs br S
0716	B/S #5 crs br S, SpG
0717	B/S #6 P
0718	B/S #7 fne br M S
0719	B/S #8 Rk
0720	B/S #9 med br S, crs P
0721	B/S #10 crs br S, P
0722	B/S #11 crs br S, fne P
0723	B/S #12 crs br S, P
0724	B/S #13 crs P
0725	B/S #14 fne br S, crs P
0726	B/S #15 crs P, Sh
0727	B/S #16 med P, brk Sh
0728	B/S #17 crs br S
0729	B/S #18 crs br S
0730	B/S #19 crs br S
0731	B/S #20 crs br S
0732	B/S #21 crs br S
0733	B/S #22 crs P
0734	B/S #23 crs P, Sh
0735	B/S #24 crs br S
0736	B/S #25 crs br S
0737	B/S #26 crs br S
0738	B/S #27 med br S, P
0739	B/S #28 med br S
0740	B/S #29 crs br S
0741	B/S #30 med br G



3/11/75

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): Boston, Massachusetts

Period: September 21 - September 23, 1971

HYDROGRAPHIC SHEET: H-9232

OPR: 473

Locality: Off the eastern coast of Cape Cod

Plane of reference (mean ~~lower~~ low water): 3.6 ft.

Height of Mean High Water above Plane of Reference is 7.2 ft.

Remarks: Recommended zoning:

Range Ratio

Time Correction

North of $42^{\circ}02'$ x 0.82
From $41^{\circ}59'$ to $42^{\circ}02'$ x 0.80
From $41^{\circ}57'.5$ to $41^{\circ}59'$ x 0.78
From $41^{\circ}56'$ to $41^{\circ}57'.5$ x 0.76
From $41^{\circ}54'.5$ to $41^{\circ}56'$ x 0.74
From $41^{\circ}53'$ to $41^{\circ}54'.5$ x 0.72
From $41^{\circ}51'$ to $41^{\circ}53'$ x 0.69

+ 15 min.

James R. Hubbard
for Chief, Tides Branch

CAM3-1
1/31/74

ATLANTIC MARINE CENTER

PROJECTION PARAMETERS

POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

1. Project No. OPR-473 4. Requested By _____
2. Reg. No. H-9232 5. Ship or Office _____
3. Field No. PE-20-2-71 6. Date Required _____

7. Polyconic ☒ Modified Transverse Mercator ☐

8. Central Meridian of Projection 69 ° 54 ' 00 "

9. Survey Scale: 1: 20,000

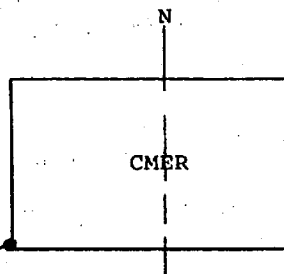
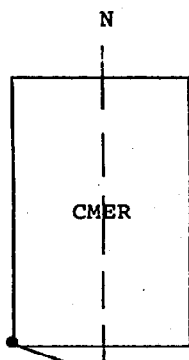
10. Size of Sheet (check one):

36 x 54 ☐ 36 x 60 ☐ Other ☒ Specify 36 x 45

11. Sheet Orientation (check one):

NYX = 1 ☒

NYX = 0 ☐



12. Plotter Origin: S.W. Corner of Sheet (not necessarily a grid intersection)

Latitude 41 ° 51 ' 10 "

Longitude 70 ° 00 ' 00 "

13. G.P.'s of triangulation and/or signals attached ☐

14. Material Desired: Tracing Paper ☐ Mylar ☐

Smooth Sheet ☐ Other ☐ Specify _____

15. Remarks: _____

Survey H-9232 PE-20-2-71 OPR-473
Category II *

No unusual problems were encountered during the verification of the survey.

The depth contours used on this survey were all standard curves from the 60-foot to 300-foot curves. No supplemental or brown curves were required to define bottom contours.

Adequate junctions were effected with the following contemporary surveys:


H-9226 (1971) on the northwest
H-9233 (1971) on the south

The junction with H-9011 (1969) on the northeast will have to be made in Rockville.

Present depths are in general harmony with charted depths on the east where no contemporary surveys junction with the present survey.

This survey was well done and adequately defines the bottom features on the survey area. No additional work is recommended.

Respectfully Submitted,


Robert A. Trauschke, CDR, NOAA
Chief, Processing Division, AMC

* Changed to category 4 and completely processed - 7-20-79

GEOGRAPHIC NAMES

H-9232

Name on Survey	Source of Information											
	A	B	C	D	E	F	G	H	I	J	K	
CAPE COD (TITLE)												1
WELFLEET (TITLE)												2
												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

Chas. E. Harrison

Chief Geographer - C3x5

26 APRIL 1979

HYDROGRAPHIC SURVEY STATISTICS

H-9232

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION			AMOUNT
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS			1
DESCRIPTIVE REPORT (COPY)		1	SMOOTH OVERLAYS: POS. ARC, EXCESS			2
DESCRIP- TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACT SOURCE DOCUMENT
ENVELOPES	11		1-smooth			
CAHIERS	1-with printouts & misc. data					
VOLUMES	0					
BOXES						

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	PRE- VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			742
POSITIONS CHECKED		74	
POSITIONS REVISED		15	
SOUNDINGS REVISED		8	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
TIME - HOURS			
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)		0	
VERIFICATION OF CONTROL		0	
VERIFICATION OF POSITIONS		8	
VERIFICATION OF SOUNDINGS		19	
COMPILATION OF SMOOTH SHEET		4	
APPLICATION OF TOPOGRAPHY		NA	
APPLICATION OF PHOTOBATHYMETRY		NA	
JUNCTIONS		2	
COMPARISON WITH PRIOR SURVEYS & CHARTS		NA	
VERIFIER'S REPORT		NA	
OTHER			
TOTALS		33	

Pre-Verification by H. R. Smith, R. G. Roberson	Beginning Date 02/05/75	Ending Date 05/15/77
Verification by B. J. Stephenson	Beginning Date 03/09/78	Ending Date 03/10/78
Verification Check by B. J. Stephenson	Time (Hours)	Date 03/14/78
Marine Center Inspection by Category FF 4	Time (Hours)	Date
Quality Control Inspection by Review by L. Quinlan	Time (Hours) 48	Date 5-28-79
Requirements Evaluation by Inspection by D. Engle	Time (Hours) 8	Date 7-20-79

REGISTRY NO. _____

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. 9232

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

OFFICE OF MARINE SURVEYS AND MAPS

HYDROGRAPHIC SURVEYS DIVISION

MODIFIED HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9232

FIELD NO. PE-20-2-71

Massachusetts, Off Cape Cod, East of Wellfleet

SURVEYED: September 21-23, 1971

SCALE: 1:20,000

PROJECT NO.: OPR-473

SOUNDINGS: Raytheon DE-723 Depth Recorder

CONTROL: Hi-Fix (Range-Range)

Chief of Party	B. I. Williams
Surveyed by	B. T. Davis
.....	J. O. Rolland
.....	J. S. Hudson
.....	J. R. Stokes
.....	T. W. Richards
.....	P. S. Hudes
Automated Plot by	Calcomp 618 (AMC)
Verified by	B. J. Stephenson
Reviewed by	L. Quinlan
	Date: May 28, 1979
Cursory inspection made--survey	D. R. Engle
processing considered complete	July 20, 1979

1. Control and Shoreline

The origin of the control is adequately discussed in part F of the Descriptive Report.

There is no shoreline within the limits of this survey.

2. Hydrography

- a. Depths at crossings are in good agreement.
- b. The usual depth curves are adequately delineated.
- c. The development of the bottom configuration is considered adequate.

3. Condition of Survey

The sounding records, smooth plotting, Descriptive Report, and printouts are adequate and conform to the requirements of the Hydrographic Manual and the Instruction Manual - Automated Hydrographic Surveys.

4. Junctions

An adequate junction with H-9011 (1969) on the north was accomplished during the review of this survey. The junctions with H-9226 (1971) on the west and H-9233 (1971) on the south have been discussed in the respective Review Reports of those surveys. There are no contemporary junctional surveys to the east; however, present depths are in harmony with charted depths along the eastern limit of the survey.

5. Comparison with Prior Surveys

- a. H-519 (1855-56) 1: 40,000
H-5276 (1932) 1:100,000

These prior surveys taken together cover the area of the present survey. A comparison of depths between these prior surveys and the present survey indicates a generally deepening trend since the earliest survey with depth differences as great as 20 feet. Differences are attributed largely to natural causes.

- b. H-8413 (1957-59) 1:100,000 (track line)

This small-scale unverified survey covers most of the area of the present survey. Although the control is questionable on this track line survey, it does support the deepening trend discussed above. Prior depths are 1 to 15 feet shoaler than present depths throughout the survey area.

The present survey is adequate to supersede the prior surveys listed above within the common area.

6. Comparison with Chart 13246 (1208), 22nd Edition, January 14, 1978

a. Hydrography

The charted hydrography originates with depths from the boat sheet (Bp-82226) and the verified smooth sheet of the present survey. Several of the charted depths originate with previously discussed prior surveys which require no further consideration.

The SUBMERGED OBSTRUCTION rep PA charted at approximately latitude 41°59.4', longitude 69°52.1' originates with Local Notice to Mariners 6 of 1977, subsequent to the present survey, and should be retained as charted.

With the above information considered, the present survey is adequate to supersede the charted information within the common area.

b. Aids to Navigation

There is one aid to navigation within the survey limits. It is located at latitude $41^{\circ}55.9'$, longitude $69^{\circ}53.8'$, is in substantial agreement with the chart, and adequately marks the intended feature.

7. Compliance with Instructions

This survey adequately complies with the project instructions.

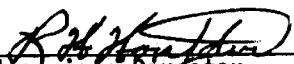
8. Additional Field Work

This is an excellent basic survey and requires no additional field work.

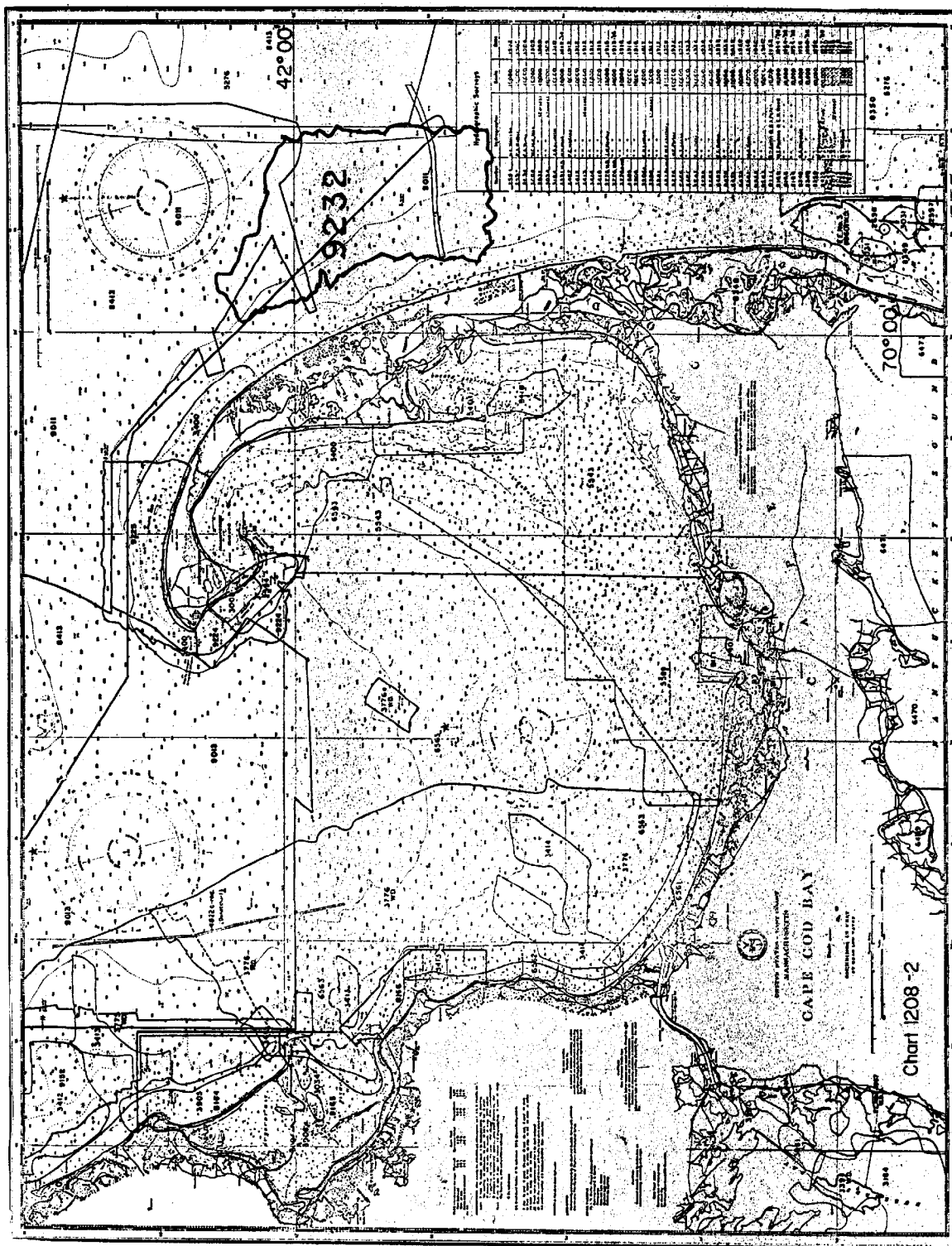
Examined and Approved:



Acting Chief
Hydrographic Surveys Division



Associate Director
Office of Marine Surveys
and Maps



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9232

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.

2. In "Remarks" column cross out words that do not apply.

3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	FINAL	REMARKS ^{Before}
13246 (1203)	4/19/78	Kevin Shaw	Full Part Before	After Verification Review Inspection Signed Via Drawing No. 37
(1107)	4/20/78	Kevin Shaw	Full Part Before	^{Before} After Verification Review Inspection Signed Via Drawing No. 31
13260 (1106)	4/20/78	Kevin Shaw	Full Part Before	^{Before} After Verification Review Inspection Signed Via Drawing No. 33
13009 (71)	4/20/78	Kevin Shaw	Full Part Before	^{Before} After Verification Review Inspection Signed Via Drawing No. 32
13006 (70)	4/20/78	Kevin Shaw	Full Part Before	^{Before} After Verification Review Inspection Signed Via Drawing No. 42
13003 (100)	4/20/78	Kevin Shaw	Full Part Before	^{Before} After Verification Review Inspection Signed Via Drawing No. 55
13246 (1208)	9-14-79	R. Wilson	Full Part Before	After Verification Review Inspection Signed Via Drawing No. 38
13200	10-12-79	R. Wilson	Full Part Before	After Verification Review Inspection Signed Via Drawing No. #33
13260	1-30-80	WILLSON	Full Part Before	After Verification Review Inspection Signed Via Drawing No. 35
13009	10-23-80	D. Wythe	Full Part Before	After Verification Review Inspection Signed Via Drawing No. 35
13006	10-23-80	D. Wythe	FULL AFTER VERIFICATION REVIEW INSPECTION SIGNED VIA DRAWING # 45	
13003	10-23-80	D. Wythe	FULL AFTER VERIFICATION REVIEW INSPECTION SIGNED VIA DRAWING # 57	